

REMARKS

This application has been reviewed in light of the Office Action dated May 26, 2009. Claims 1-4, 8 and 9 are presented for examination, of which Claim 1 is in independent form. Claim 5 has been canceled, and its recitations have been incorporated into Claim 1; this action is taken without prejudice or disclaimer of subject matter. Claims 1-4 and 9 have been amended to define still more clearly what Applicants regard as their invention. Favorable reconsideration is respectfully requested.

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,646,377 (Oda) in view of U.S. Patent 5,798,756 (Yoshida et al.), Claim, 4 as being unpatentable over *Oda* in view of *Yoshida* and further in view of U.S. Patent 5,128,499 (Morita), Claim 5, as being unpatentable over *Oda* in view of *Yoshida* and U.S. Patent 5,567,920 (Watanabe et al.), and Claims 8 and 9, as being unpatentable over *Oda* in view of *Yoshida* and U.S. Patent Application Publication 2003/0086149 (Kawai).

Applicants submit that the independent claim, together with its dependent claims, is patentably distinct from the cited prior art for at least the following reasons.

As discussed in the specification, in a conventional position detection sensor based on a matrix-type liquid crystal panel, single closed-loop circuits are laid out in parallel along the X direction and the Y direction (para. [0002]). A position indicator emits electromagnetic waves to induce electromotive forces (EMF) and currents in nearby single closed loop circuits (para. [0003]). The indicated position may then be determined by selecting the single closed-loop circuit with a maximum current along the X direction or the Y direction (para. [0043]). However, there is plenty of room for improving the detection sensitivity of such a position detector sensor.

As is known to those with ordinary skill in the art, the EMF induced in a closed-loop circuit is roughly proportional to the size of the circuit wire (*see* http://en.wikipedia.org/wiki/Faraday%27s_law_of_induction as an exemplary explanation of this point¹). The size of such circuit wire tends to get larger when there are more loops or when each loop becomes bigger. According to certain aspects of the present invention, each closed-loop circuit may consist of double loops, triple loops, etc., where the loops are relatively big and roughly parallel to one another (para. [0024]). In this way, the EMF induced in each closed-loop circuit is increased, and it is more likely to perform position detection accurately (para. [0062]). Further, according to the certain aspects of the present invention, the closed-loop circuits are uniformly overlaid along the X direction or the Y direction for space efficiency and matrix design simplification, among other things (para. [0056] and [0057]).

Claim 1 recites, among other features, “the closed-loop forming circuits disposed at two ends of the display panel connect at least a pair of terminals of the X interconnecting lines in each end to form *a multiple closed loop as a closed-loop circuit consisting of multiple parallel loops of the X interconnecting lines*” and that “the closed-loop forming circuits disposed at two opposite ends of the display panel and at another two opposite ends of the display panel *sequentially form multiple closed loops that are uniformly distributed with an embedded structure* such that a multiple closed loop and another one subsequently formed overlap with each other [emphases added].”

This feature is not believed to be disclosed or suggested in *Oda*, *Yoshida*, and *Watanabe*, considered separately or in any permissible combination. The Office Action

¹ It is noted that this site is not cited as prior art, or as evidence of any sort, but is merely referred to as providing a clear discussion of this point.

concedes that *Oda* and *Yoshida* do not disclose or suggest this feature, and Applicants submit that *Watanabe* does not, either.

As Applicants understand, *Watanabe* relates to a position reading apparatus using a feedback loop for inputting positional information (*see* Abstract). When a pointer with a resonant circuit approaches a first coupling device and a second coupling device which are properly positioned with respect to each other, electromagnetic coupling is established between the resonant circuit and respectively the first and second coupling devices. As a result, a feedback loop (again, for an explanation of a closed loop, *see* http://en.wikipedia.org/wiki/Open-loop_controller, for example²) also involving an amplifier is formed, and oscillation occurs in the feedback loop at the resonant frequency of the resonant circuit. The oscillation signal can then be measured and used to determine the position of the pointer.

Specifically, each of the first and second coupling devices is an open-loop circuit, which could consist of a single loop (*see* Fig. 2) or multiple loops (*see* Fig. 18). Only when the first and second coupling devices are combined with a resonant circuit through electromagnetic coupling might a closed-loop circuit be formed. In other words, each multi-fold loop, serving as a first or second coupling device, certainly does not constitute a closed-loop circuit. Even as two of them combine with a resonance circuit, the combination does not constitute a multiple closed loop, where all the loops are parallel to one another. Therefore, even assuming that such multi-fold loops could overlap each other, they or any closed loops they might be part of would not be “multiple closed loops,” and certainly not those which are “uniformly distributed” with an embedded structure, as recited in Claim 1.

² It is noted that this site is not cited as prior art, or as evidence of any sort, but is merely referred to as providing a clear discussion of this point.

Accordingly, Claim 1 is believed patentable over *Oda, Yoshida, and Watanabe*, considered separately or in any permissible combination.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claim. Therefore, the independent claim is believed to be allowable over the art of record.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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